

UC Davis Translational Human Embryonic Stem Cell Shared Research Facility

Grant Award Details

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Grant Type: Shared Labs

Grant Number: CL1-00504-1.2

Project Objective: The objective of the shared lab is to provide a resource to the stem cell community including training, use of cell lines, and equipment.

Investigator:

Name:	Alice Tarantal
Institution:	University of California, Davis
Type:	PI

Human Stem Cell Use: Embryonic Stem Cell, iPS Cell

Award Value: \$1,728,111

Status: Closed

Progress Reports

Reporting Period: Year 1

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Reporting Period: Year 2

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Reporting Period: Year 3

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Reporting Period: Year 4

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Reporting Period:	Year 5
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Reporting Period:	Year 6
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Reporting Period:	NCE (Year 7)
View Report	

Grant Application Details

Application Title: Translational Human Embryonic Stem Cell Shared Research Facility

Public Abstract: The intent of the proposed shared research facility is to provide a state-wide resource for qualified scientists in California to study human embryonic stem cells (hESC) without federal restrictions. The shared facility will encourage a spirit of collaboration and include laboratories for investigators to culture, collect, store, and analyze hESC, provide necessary services that will be cost-effective and assist with research productivity, and ensure an environment that will facilitate the essential interactions among scientists. This approach will advance the use of hESC for regenerative medicine purposes and aid in developing new technologies and therapies for the treatment of human disease. Using established methods that have proven successful for other collaborative and service-based structures, this facility will encourage scientists to work together and provide the necessary resources to ensure their success. Investigators new to hESC research will benefit greatly by having this facility available because it will have a centralized supportive structure where experienced personnel will provide the necessary assistance and guidance. For those investigators with hESC research experience, new opportunities will be available to work with cell lines that can be obtained but not be used in laboratories that are supported by federal funding. This will greatly expand research programs that are focused, for example, on studying ways to differentiate hESC towards blood cells and vessels for the treatment of disorders such as sickle cell disease and vascular abnormalities associated with heart disease. In addition, regeneration of damaged organs such as the heart, lung, liver, or kidney may require methods to reconstruct these tissues using scaffolds on which to grow the cells. These approaches require the ideas of cell biologists, engineers, biomedical researchers, and clinicians working together, and testing these ideas to ensure the procedures are safe before considering treatments of human patients. Techniques such as those that focus on ways to monitor cells once they are injected into the body will provide a powerful tool to study the outcome of these therapies.

A techniques course will be offered to scientists, students, and staff which will result in more laboratories in California working with hESC. The cells are difficult to grow and specialized training is required by personnel that are highly skilled and can provide the necessary information and direction to ensure success. The course is designed to provide qualified applicants the training experiences that will reinforce the basics, and ensure they are able to establish these techniques in their laboratories. The training course will be offered 4 times during the calendar year and include presentations and 'hands-on' experiences. Continuing education through the facility will ensure trainees have the necessary support when they return to their respective laboratories.

Statement of Benefit to California:

The Translational Human Embryonic Stem Cell Shared Research Facility will serve the state and its citizens by providing unparalleled opportunities to investigators, and establish a model for the manner in which researchers throughout California can work together to advance the use of cellular therapies for the treatment of human disease. This facility will remove barriers preventing the transfer of promising stem cell therapies to human patients by connecting people with expertise and new ideas with the resources necessary to develop and to evaluate new technologies and therapies under the necessary conditions before they are assessed in humans. The California community will benefit from the results of this collaborative environment because it will facilitate and advance research findings, promote a culture of sharing, and educate and train a new generation of scientists in human embryonic stem cell research. This approach, the infrastructure and goals of the proposed facility, and the plans for the techniques course will all provide opportunities for scientists, students, fellows, and staff, and increase the number of qualified scientific and medical personnel that will be able to make new discoveries and ultimately improve health care for patients.

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